The
VETERINARY RECORD
Founded by William Hunting, F.R.C.V.S., in 1888
7, MANSFIELD STREET, PORTLAND PLACE, LONDON, W.1. MUSEUM 6541
No. 17 APRIL 28th, 1956 Vol. 68
Registered for Transmission as a Newspaper *Price 2s. post free*

The Arton Wilson Committee Report

ONCE again the veterinary profession will be gratified to learn that their colleagues in the State Veterinary Service have received praise from an independent Committee for the high standard and efficiency of the service they provide to the agricultural community. In 1954, the veterinary services of the Ministry of Agriculture and Fisheries were almost alone in not being criticised by the Select Committee on Estimates; in the same year, too, came the report of the Gowers Committee on Foot-and-Mouth Disease with its tributes to the staff of the Animal Health Division. Now, in 1956, comes the report of the Arton Wilson Committee, appointed to review the provincial and local organisation of the Ministry of Agriculture and Fisheries, again critical of much of the organisation of the Ministry but praising the veterinary services.

In one important respect the Arton Wilson report is unique in that it actually recommends the transfer of a large block of work to the veterinary inspectorate from another division of the Ministry. For many years past, prominent members of the profession have advocated control and supervision of the technical aspects of the Milk and Dairies Regulations by the veterinary officers of the Animal Health Division. There are even those who claim that the trenchant criticisms of the Select Committee in 1954 would not have been merited if " milk " had been under veterinary control, as it was in the days of Local Authority administration prior to 1938.

It is to be hoped that the Minister will decide to implement the recommendations of the Arton Wilson Committee in regard to " milk." In this event, the burdens of the Divisional Veterinary Officers will be greatly increased, but to them will fall the privilege of proving that the veterinarian, by virtue of his training and experience, is the right person to shoulder the responsibility not only of controlling disease among dairy herds, but also of ensuring that milk supplied to the people of this country is both safe and clean.

There is, however, another side to the recommendations of this Committee. It is not a little surprising, after its praise of the efficiency of the veterinary staff as organised at the present time, to find the Committee in general support certain measures of reorganisation put forward by the Ministry in 1954, some of which would call for changes causing great personal inconvenience, including changes of station, for many members of the staff. The Committee does not, for instance, advance any arguments in support of its view that there might be two grades of Divisional Veterinary Officer, a proposal which, if implemented, would have widespread repercussions throughout the Service.

Furthermore, the Committee makes no reference at all to the important part played by the laboratory staffs of the Animal Health Organisation, and although the laboratories did not come within its immediate terms of reference, this omission could have an adverse effect on the status of the senior research officers at the laboratories and also of the senior investigation officers. It will be the responsibility of the representatives of these sectional interests in the Service, when these matters are discussed with the Official side, to ensure that all grades of the veterinary service receive the status due to them. It is essential that anomalies should not be created within the State veterinary organisation where the staffs, in the words of the Arton Wilson report, " over the years have built up a tradition of service which commands wide respect."

(*Continued on page* 241)

Variations in the Quantity and Composition of Milk Yielded by Diseased Cows which did not Show Elevated Body Temperatures

BY

J. O. L. KING

University of Liverpool Faculty of Veterinary Science

Literature

IN a previous article (King, 1955) the variations in the quantity, fat percentage and solids-not-fat percentage of the milk yielded by 28 diseased cows while their body temperatures were elevated were recorded. The cows were in-patients in the hospital block at the Veterinary Field Station. Seventeen were Friesians, eight were Ayrshires, two were Shorthorns, and the other was a Holstein. Ten had had caesarean section operations, 13 had had rumenotomy operations, one was a suspected traumatic reticulitis case, but no operation was performed, one had a ruminal fistula, one had had a digit amputated, one had an abscess of the hock, and the other was suffering from post-parturient pyrexia. The association between body temperature and the yield and composition of the milk was considered in the following temperature ranges: 104° F. or over, from 102.5° to 103.9° F., and 102.4° F. or below. In 12 animals (Group 1) temperatures in all three of these ranges were recorded, and in the other 16 (Group 2) temperatures in the 102.5° to 103.9° F. and the 102.4° F. and under ranges only were encountered. The results are given in the following tables, which were included in that paper.

TABLE I

THE AVERAGE MILK YIELD, FAT PERCENTAGE AND SOLIDS-NOT-FAT PERCENTAGE FROM CONSECUTIVE MORNING AND EVENING MILKINGS OF THE TWELVE COWS IN GROUP 1

	(1)	(2)	(3)	
	Temperatures of 104° F. or over	Temperatures of 102·5° to 103·9° F.	Temperatures of 102·4° F. and under	Standard error
Average yield (lbs.)	13·06**	17·46†	23·13	±0·80
Average fat per cent.	5·36**	4·08	3·74	±0·20
Average S.N.F. per cent.	8·27*	8·68	8·62	±0·12

Difference in the means of columns (1) and (2) :
*Significant at the 5 per cent. level of significance.
**Significant at the 1 per cent. level of significance.
Difference in the means of columns (2) and (3) :
†Significant at the 1 per cent. level of significance.

These findings showed that the changes which occurred followed the same general pattern as those recorded in the literature surveyed. As there were relatively few papers which dealt with the effects of raised body temperatures on milk yield and composition, reference was made to articles which showed that a steady increase in rectal temperature was obtained with increasing air temperatures, and that at environmental temperatures over 80° F. the yield was reduced, the solids-not-fat percentage was decreased, and that, in the majority of cases, the fat percentage was raised. These findings clearly indicated the possibility of an association between body temperature and milk composition.

TABLE II

THE AVERAGE MILK YIELD, FAT PERCENTAGE AND SOLIDS-NOT-FAT PERCENTAGE FROM CONSECUTIVE MORNING AND EVENING MILKINGS OF THE SIXTEEN COWS IN GROUP 2

	(1)	(2)	
	Temperatures of 102·5 to 103·9° F.	Temperatures of 102·4° F. and under	Standard error
Average yield (lbs.)	17·43	23·19	±0·80
Average fat per cent.	4·53	3·94	±0·13
Average S.N.F. per cent.	8·25	8·47	±0·03

Differences in the means of the two columns were all significant at the 1 per cent. level of significance.

Experimental

To serve as a comparison the quantity and composition of the milk yielded by 30 cows, which were also in-patients in the veterinary hospital, and which were suffering from similar disease conditions, but which did not develop raised body temperatures, has been studied. From the findings of the literature surveyed in the previous paper, and from observations made on diseased cows, it has been concluded that the temperature of a dairy cow at rest, if not taken immediately after feeding or milking, can rise to 102.4° F. before the incidence of disease is suspected. Thus, the results given here refer to cows which did not show a body temperature above 102.4° F. Sixteen were Friesians, eight were Ayrshires, one was a Shorthorn, one a Shorthorn-Ayrshire cross, two were Guernseys, one was a Jersey and the other a Guernsey-Jersey cross. Ten had had caesarean section operations, nine had had rumenotomy operations, one was a suspected traumatic reticulitis case, but no operation was performed, two had ruminal fistulae, four had had digits amputated, two had superficial abscesses, one had been dehorned, and the other was suffering from encephalitis due to a cranial injury.

Samples were collected on the second and seventh days after the animals' admission to the veterinary hospital, except for those cows on which caesarean section operations were performed. For the latter the samples were not taken till the fifth day after the operation, and again five days later. The tem-

peratures were taken before milking by inserting a stub-nosed thermometer into the rectum to a depth of between 8 and 9 cm. and keeping it in position for approximately one minute. All figures for yield, fat percentage and solids-not-fat percentage, are the average of a consecutive morning and evening milking. As in the previous experiments the greatest possible care was taken to see that factors other than disease known to affect the composition of milk did not have any influence on the samples examined. The fat percentages were determined by the B.S.S. No. 696 (1936) Gerber method, and the solids-not-fat percentages by the the B.S.S. No. 734 (1937) density method.

TABLE III

THE AVERAGE MILK YIELD, FAT PERCENTAGE AND SOLIDS-NOT-FAT PERCENTAGE FROM CONSECUTIVE MORNING AND EVENING MILKINGS OF THE THIRTY COWS WITHOUT RAISED BODY TEMPERATURES

	(1)	(2)	
	First day	Fifth day	Standard error
Average yield (lbs.)	11·6	14·1*	0·30
Average fat per cent.	4·98	4·53	0·07
Average S.N.F. per cent.	8·69	8·66	0·01

*The difference between 11·6 and 14·1 was significant at the 1 per cent. level.

Discussion

Yield

The milk yields showed a fairly constant tendency to rise both when the temperatures dropped, and, in the cows with normal body temperatures, on recovery after an operation. In all the animals in Group 1, except in one when it remained constant, there was a rise when the temperature dropped from over 104° F. to the 102.5° to 103.9° F. range, and, without exception, the yields rose again when the temperatures became normal. The differences in the means of the three ranges were significant at the 1 per cent. level. In Group 2 every cow increased in yield when the temperatures became normal, and the difference in the means was again significant at the 1 per cent. level. In the cows without raised temperatures recovery was accompanied by a rise in milk yield in all the cows except two, in one of which it remained constant. The difference in the means of the two groups was significant at the 1 per cent. level.

Fat

In all the 12 cows in Group 1 the highest fat percentages were recorded while the temperatures were 104° F. or over, and the difference in the means between the fats at this, and the 102.5° to 103.9° F. range, was significant at the 1 per cent. level. In 10 of the 12 cases the lowest fat percentages occurred while the temperatures were below 102.4° F., but the difference in the means between this and the 102.5° to 103.9° F. range was not significant. In Group 2 the highest fat percentages were recorded while the temperatures were over 102.5° F. in 12 of the 16 cases, and the difference in the means was significant at the 1 per cent. level. In 16 of the cows without raised body temperatures the fat percentages dropped as they recovered, but the fat percentages rose in the other 14. The fat percentages showed an increase in the two cows which did not give more milk on the fifth day. The difference in the means of the two ranges was not significant. Thus in these cows recovery and a rise in milk yield did not result in a definite drop in the fat percentage as was the case with the cows with elevated body temperatures.

Solids-not-fat

In Group 1, in all cases except two, the lowest solids-not-fat percentage was recorded while the temperature was in the highest range and the difference in the means between this and the 102.5° to 103.9° F. range was significant at the 5 per cent. level. In four of the 12 cases the solids-not-fat percentage was higher in the 102.5° to 103.9° F. range than in the normal temperature range. The average in this temperature range was also greater, largely due to the marked difference in two of the cases. The difference in the means, however, was not significant. In Group 2 the lowest solids-not-fat percentages were recorded when the temperatures were in the range between 102.5° and 103.9° F., except in two cases, and the difference was significant at the 1 per cent. level. In 19 of the cows without raised body temperatures the solids-not-fat percentage dropped from the first to the fifth day of sampling, in 10 it rose, and in the other case it remained constant. In the cow in which the yield showed no increase the solids-not-fat percentage remained unchanged, and in the cow with the drop in yield the solids-not-fat percentage rose. The difference in the means of the two ranges was not significant. In these cows, therefore, there was a tendency for the solids-not-fat percentages to drop when the cows recovered and their yields rose, and not to rise as was the case with the cows in Groups 1 and 2.

Summary

The results of the examination of milk samples from 30 diseased cows which did not develop raised body temperatures have been recorded. All the cows were in-patients in a veterinary hospital, and the samples were collected on the second and seventh days after admission, except for those cows on which caesarean section operations were performed when the samples were not taken till the fifth day after the operation, and again five days later. The results showed that recovery was accompanied by a significant rise in milk yield, but that the changes in the fat and solids-not-fat percentages were not significant. These findings have been compared with similar observations, previously recorded, made on 28 diseased cows which developed raised body temperatures, when it was found that a rise in body temperature was accompanied by a fall in yield, and that there was a tendency for the fat percentage to increase and the solids-not-fat percentage to decrease as the body temperature rose.

(Concluded at foot of col. 1 overleaf)

Suspected Fodder-beet Poisoning in Pigs

BY

J. T. BAXTER

Veterinary Research Division, The Farm, Stormont, Belfast

Introduction

IN Northern Ireland fodder-beet is not widely fed to stock, and no adverse reports have been recorded, such as those of Penny (1954) and Worden *et al.* (1954) in England, following its feeding to cattle. Neither has ill-health in pigs fed fodder-beet been recorded here. Inglis (1953) has indicated that, under certain conditions, fodder-beet in the diet may result in loss of health in pigs; the purpose of the present communication is to describe the circumstances which gave rise to suspected fodder-beet poisoning in a group of these animals.

In the early months of 1954 16 pigs took part in a trial designed to compare the feeding of fodder-beet on the Lehmann system with an all-meat diet. The pigs were divided into two comparable groups of eight and put into adjacent pens in a fattening house. At the commencement of the trial when they were 12 weeks old the average weight was 77 lb. One group of eight acted as the control and was fed a meal mixture to appetite from an automatic feeder. The other eight pigs were fed a meal mixture with a higher protein level, and for the first four weeks of the trial each received an average of 3.6 lb. of the mixture per day. The meal was given in two feeds followed immediately by pulped fodder-beet, without tops, to capacity. For the first month each pig consumed an average of 6.8 lb. fodder-beet per day. At the end of this period the pigs averaged 120 lb. live weight. During the next four weeks the meal was increased to 4.14 lb. per day. Although the quantity of meal provided was increased after the fourth week of the trial the protein content was altered from 15 per cent. animal protein to 10 per cent. vegetable protein.

All the pigs remained healthy and made reasonable weight gains for the first seven weeks of the trial, but after that the pigs receiving fodder-beet began to show signs of illness. At this time each pig was eating about 12 lb. of beet per day.

Clinical

At this stage the control pigs were found to be in normal health. The beet-fed pigs had not developed as well as the others, and showed much more variation in size. Some, which were in poor condition, had made no weight gain in a fortnight. All the pigs in this group were affected by a marked diarrhoea, the faeces being copious and watery, but without an offensive odour. The pigs were reported to be in a nervous state which became more marked on the approach of the attendant. They were active, and all had an alert appearance. Temperatures were normal, although a few of the pigs were coughing. Appetite remained unimpaired for meal but the fodder-beet consumption was slightly reduced.

Until shortly before the onset of illness, the fodder-beet in use had been Red Otofte X when a sudden change was made to a white-skinned type, Pajbjerg Rex X, on the assumption that, as this variety has a higher dry matter content, the pigs would benefit. Both varieties of beet, as the result of bad storage conditions, had a fresh growth of green sprouts, and many of the white-skinned beet had large areas of green in the skin. A fair amount of soil was adhering to both varieties.

Diagnosis

Based on the history and clinical picture a diagnosis was made of sub-acute poisoning following the irrational use of fodder-beet. The coughing probably indicated a flare-up of virus pneumonia brought about by the lowered general state of health of the pigs, as this disease is common in the area.

Treatment and course of the disease

The diet was changed as follows. The quantity of beet was reduced to 10 lb. and the white-skinned variety was replaced by Red Otofte X which was cleaned and had the green growing sprouts removed. The meal ration remained as before.

After 10 days the pigs showed a well-marked improvement in condition. Later, when the amount of beet was increased, diarrhoea again occurred. In consequence, until the end of the trial, the daily ration was limited to less than 12 lb. per head. No subsequent trouble was experienced although small amounts of white-skinned beet were later re-introduced to the diet.

Discussion

When disease has occurred following the consumption of fodder-beet a number of factors have been incriminated. Inglis (1953) advised that fodder-beet should be added gradually to the diet of pigs. Worden *et al.* (1954) recommended, when cattle are being fed, that in replacing one variety of fodder-beet by another, a transition period of up to a fortnight might be necessary. These authors also recognised that the higher the dry matter content of the beet the greater is the risk of digestive upset and the appearance of

Acknowledgments.—The writer wishes to thank Professor J. G. Wright for allowing the work to be undertaken, Mr. B. Burrows and the other members of the lay staff of the veterinary hospital for taking the body temperatures of the cows, and collecting the milk samples, and Miss J. Ashcroft for assisting with the laboratory analyses.

Reference

KING, J. O. L. (1955). *Vet. Rec.* **67**. 432.

hypocalcaemia. While opinion varies regarding the toxicity of fresh tops, it is thought to be inadvisable to feed them to pigs unless the whole root is also fed. In that event the proportion of leaf to root is such as to minimise the danger (Fiddian, 1951). It is generally believed that the green-growing parts may concentrate the poisonous principle, and that frosted beet should not be fed. Contamination of the beet with soil is looked on as a potential danger to pigs (Inglis, 1953). Fiddian (1951) referring to work carried out at Reading and Wye reported that the meal supplement should contain a high proportion of protein, and probably 15 to 20 per cent. fishmeal is necessary. This allows up to 20 lb. of fodder-beet to be fed daily to fattening pigs without affecting their health.

In the present case the main factors appeared to be that the fodder-beet was changed abruptly from one variety to another at a time when the amount consumed was steadily increasing, and that this took place three weeks after the alteration of the protein in the meal supplement from 15 per cent. animal to 10 per cent. vegetable protein.

Subsidiary factors may have been the presence of dirt on the beet from the start of the trial, and the small green sprouts on both varieties. The combination of growing tops and green areas on the skin of Pajbjerg Rex X, the second variety, may have accentuated the trouble.

After their recovery from the disease the pigs were unable to eat the same amount of beet as before without risk of relapse, and this would appear to indicate that they were left with a reduced tolerance to it.

Toxicological examinations were not carried out on the fodder-beet. Oxalic acid has generally been regarded as the toxic agent in fodder-beet and sugar-beet. Gregor (1953) found that sugar-beet tops contain oxalic acid in amounts toxic to stock and that pigs and horses are more susceptible than cattle. Nitrate poisoning has also been suspected, and Savage (1949) records a case where a number of cattle died after eating frosted green sugar-beet tops. On analysis the tops were found to contain 1 to 6 per cent. nitrate and Savage calculated that 40 lb. of tops containing 4 per cent. nitrate would be sufficient to kill two 1,000 lb. steers if the toxic dose is 1 oz. per 100 lb. bodyweight.

The opinion of Worden *et al.* (1954) is that the typical syndrome associated with fodder-beet poisoning in cattle is not due to oxalates or nitrites but is due to the ruminal production of ammonia or other toxic N- containing alkaline substances which, resulting in alkalosis, may lead to hypocalcaemia.

So far as pigs are concerned the position is complex and it would appear that the toxic agent in beet which gives rise to the pathological processes reflected in scouring, wasting and change of temperament has still to be isolated.

Summary

The conditions under which a group of pigs became affected with suspected fodder-beet poisoning are described.

Acknowledgments.—I wish to thank Mr. G. Pollock, N.D.A., County Advisory Officer, Ministry of Agriculture, Northern Ireland, for information included in this report, and Dr. W. R. Kerr for helpful criticism.

References

FIDDIAN, W. E. H. (1951). *Agriculture, London.* **58.** 258–63.
GREGOR, A. (1953). *Proc. Con. metab. Disorders,* B.V.A. Pub. No. 23, 132–6.
INGLIS, J. S. S. (1953). *Ibid.* 104–11.
PENNY, R. H. C. (1954). *Vet. Rec.* **66.** 134.
SAVAGE, A. (1949). *Can. J. Comp. Med.* **13.** 9–10.
WORDEN, A. N., BUNYAN, J., & PICKUP, J. (1954). *Vet. Rec.* **66.** 133–4.

HOLIDAY EXCHANGE

In recent issues of this journal we have invited the consideration of our readers to the value of holiday and correspondence exchanges between the children of veterinary surgeons in Great Britain and those of their European colleagues. Space has precluded details of concrete suggestions for this summer, but we publish a list below. Time has now grown somewhat short, and readers who may be interested are asked to write immediately to the General Secretary of the B.V.A. who will do his very best to ensure that happy exchanges are arranged. Detailed proposals are as follows:—

Eight French *boys* ranging in age from 13 to 17 and living in the following places in France would like to be received in veterinary homes in Britain:—

Beaune, Cote-d'Or	(16-year-old)
Angoulême, Charente	(15-year-old)
Montaigu, Vendée	(14-year-old)
Montrichard, Loire-et-Cher	(17-year-old)
Allès, Gard	(17-year-old)
Mayenne, Mayenne	(14-year-old)
Champdeniers, Deux-Sèvres	(14-year-old)
Cognac, Charente	(15-year-old)

There are also 10 *girls* ranging in age from 13 to 18 from the following places:—

Meaux, Seine-et-Marne	(15-year-old)
Rheims, Marne	(18-year-old)
Garches, Seine-et-Oise	(17- and 13½-year-old)
St. Denis la Chevasse, Vendée	(18- and 16-year-old)
St. Bazeille, Lot-et-Garonne	(17-year-old)
Locmine, Morbihan	(13-year-old)
Moselle	(Two 16-year-olds)

There is one Italian exchange offered. A 14-year-old boy, living with his parents and one sister in Florence, would like a holiday in England this summer and would welcome in return an English boy in his home.

EXCHANGE OF CORRESPONDENCE

We have the names of two more French children who would like English correspondents. They are both girls of about 15, one living in Constantine, Algeria, and the other in Bar-le-Duc (Meuse), France. Please write to the General Secretary if your son or daughter would care to start a correspondence.

Post-parturient Haemoglobinuria (Haemoglobinaemia) in Cattle

BY
RICHARD H. C. PENNY
Leighton Buzzard

Introduction

IN 1853 Cumming reported the occurrence of post-parturient haemoglobinuria in Scotland (Hutyra, Marek & Manninger, 1946), and since then it has been recognised in many countries including Norway, Sweden, Finland, Denmark, Austria, Ireland, and the U.S.A. (Madsen & Neilson, 1939). The disease, as it occurs in Scotland, was described at length by Wallace (1926). He stated that it appeared to be decreasing, probably owing to improvements in animal husbandry; it was most common on poor farms and crofts, and it occurred on certain farms in some districts with surprising regularity. Mortality was put at 20 per cent. and the treatment recommended was intravenous glucose and subcutaneous saline, together with stimulants and good nursing. Items reported in the discussion on this paper were that the use of *liquor Ferri. Perchlor. Forte* in 1 oz. doses was helpful, and that the affection was most common in the spring. The cause was uncertain, but it was thought it might be a disturbance of metabolism due to a deficiency, precipitated by an unbalanced diet of straw and roots. Boddie (1949) thought it might be due to a toxic factor plus a mineral deficiency. He observed a pronounced degree of ketosis with this condition.

In the U.S.A. parturient haemoglobinuria has been prevalent in certain districts for a number of years, mainly Colorado, Utah, and Idaho (Farquharson & Smith, 1938). Several cases have been diagnosed in New York State (Udall, 1954). Madsen & Neilson (1939) studied the condition in detail and they blamed, as a contributory cause, a diet consisting mainly of alfalfa hay and beet pulp. They found the highest incidence in third and fourth calvers and no case was recorded before the second calf. In 38 cases the cows were given an average of 58 lb. of milk at the beginning of the disease, and in all but two cases the owners stated that the cow concerned was the best producer, or equal to the best. These authors studied the blood chemistry of their cases and found extremely low blood plasma inorganic phosphorus levels. They recommended treatment with acid sodium phosphate intravenously. In 1944 they produced a case experimentally by feeding a low phosphorus diet. After two years eight months, symptoms of parturient haemoglobinuria developed. In this case the inorganic blood phosphorus level was 1.43 mg. per cent.; but in their natural cases it was as low as 0.22 mg. per cent.

Case 1

The writer first observed the condition in Buckinghamshire in 1954, when on January 21st, in very severe weather, he was called to a roan Shorthorn cow, aged five years, three weeks after calving. Her daily milk yield was approximately 65 lb., and at the morning milking she had appeared normal in all respects. After milking she was turned into the yard for exercise and water when it was noticed that, as she went out, she voided a large quantity of rather frothy urine.

Examination

The cow was examined some hours afterwards and did not look abnormal. Her temperature was 102° and her pulse rate 82. Slight diarrhoea was present, but no urine was voided at examination and an adequate description of it was not forthcoming. Her appetite at the time was good and her ration consisted of mangolds, good quality hay, a mixture of home-grown oats and beans and a purchased cake.

As the farmer had recently experienced an outbreak of winter diarrhoea, a tentative diagnosis of this condition was made and a copper sulphate solution given by mouth. A container for the collection of a urine sample was left in the byre and a specimen was collected that night. It resembled thin black treacle. By next morning her condition had worsened, and from the appearance of the soiled bedding behind her it was obvious that she had passed large quantities of similar urine during the night. Her temperature was 101.8° F. and her pulse was now 100. Her mucous membranes were pale, the respirations accelerated, and faeces scanty. Water was refused and appetite was lost.

Urinary Examination

The urine obviously contained large quantities of haemoglobin (methaemoglobin) and on centrifugation there was very little sediment. The latter contained some cells and a few red blood corpuscles. The diagnosis was haemoglobinuria and a speedy return to the farm was made with an antidote for "red water," 7½ c.c. of which was administered subcutaneously. (The cow was worsening fast and a full dose was considered unwise.) At the time of injection a blood sample was obtained and smears made. A search for ticks failed.

Blood Examination

The slides were stained by Leishman, but no babesia were observed. Haemoglobin estimation by Talquist's scale was 50 mg. per cent. and by Sahli 45 mg. per cent.

On the morning of January 22nd she was down and unable to rise. Her heart beat was tumultuous and could be heard on entering the box, her pulse rate was 140, temperature 103° F. and respirations greatly accelerated. She was very restless and moved her head continually from side to side, moaning as she did so. Her vision appeared to be impaired and

her mucous membranes were cold and markedly icteric.

A further 5 c.c. of a piroplasmocidal agent was administered and 10 c.c. of liver extract. One 500-c.c. bottle of saline was given intravenously with considerable difficulty, as the jugular vein was collapsed. Two hours later, with the aid of a simple bleeding apparatus, 3 pints of blood were drawn from a dry cow, being fattened, and this, together with 2 further pints of saline, was injected intravenously. The method used for drawing the blood was that suggested by Jarrett (1952). Bottles to hold 500 c.c. were boiled, 1¾ oz. of a 3.8 per cent. sodium citrate mixture added and rubber bungs were inserted while the bottles were still hot. Unfortunately no silicones were available (to delay coagulation) but the apparatus was washed through with citrate mixture. As the bottles were filled they were immersed in a bucket of warm water and a flutter valve was used to inject the blood into the recipient animal. The transfusion was administered at 3 p.m. and at 7 p.m. the cow was on her feet. She was unsteady on her legs and refused both food and water. Her pulse rate was 100.

The following morning she drank 4 gal. of water and appeared much brighter. An evil-smelling diarrhoea was still present, but respirations were improved and pulse rate was again 100. That afternoon a further attempt at transfusion was made, but on this occasion only 2 pints of blood could be drawn, and this with difficulty. (The day was much colder and despite frequent rinsing of the tube with an anticoagulant, clotting took place.) The blood was administered together with a further 2 pints of saline. The next morning the cow was eating hay and mangolds and drinking copiously. She was much steadier and her vision had improved. Her urine was less highly coloured, her pulse rate 90 and temperature 101° F. The owner was advised to give her ample chilled water and a varied diet with some kale and roots, as long as they were not frosted. A simple haematinic was administered in drinking water and 10 c.c. liver extract was injected intramuscularly. Further progress was uneventful and complete recovery occurred in six weeks.

Case 2

On January 3rd, 1955, the writer was called by the same owner to examine a five-year-old red Shorthorn cow that had calved her third calf three weeks previously. Her milk yield at the time was 5 gal. daily and in the morning her urine was noticed by the cowman to be dark and frothy. Once again the weather was very cold with snow on the ground.

Examination

The cow's appetite was nil, her temperature 103.5° F., pulse rate 104 and haemoglobin by Sahli 45 mg. per cent. Four pints of saline were given intravenously and 5 c.c. of a cardiac stimulant intramuscularly. Faeces were normal. A blood sample was taken on January 4th and this showed the following mineral levels:—

Calcium mg. per cent. ...	9·1
Magnesium mg. per cent. ...	0·9
Acetone	Normal
Inorganic P. mg. per cent.	1·8
Urine for haemoglobin ...	++++

At that time she was breathing heavily, her temperature was 104° F., and her pulse 124. Her mucous membranes were pale and slightly icteric and her urine was still black in colour. She was drinking a little and had taken some hay. It was agreed with the owner that if there was no improvement by the morning, transfusion would be attempted. On January 5th temperature was 101° F. and pulse rate 120. She was eating hay and drinking well, and haemoglobin by Sahli was 45 mg. per cent. Her urine was clear and her milk yield, which had ceased, was now ½ gal. Five c.c. liver extract was given intramuscularly and a haematinic in her drinking water. Her health improved quickly and she made a more rapid recovery than the first case.

Case 3

On January 13th, 1955, once again in wintery weather, a red Shorthorn cow aged five years, three weeks post-parturient, was down 4 lb. in her milk yield and her urine was dark in colour.

Examination

The cow's temperature was 104.5° F. and her pulse rate 128. Her bodily condition was very good, appetite fair, and membranes a normal colour. An injection of 4 c.c. of a cardiac stimulant was administered and 4 pints of saline given intravenously; 5 c.c. of liver extract was also injected.

Blood Chemistry

	13.1.55 a	14.1.55 b	15.1.55 c
Ca mg. per cent.	7·2	7·8	10·9
Mg mg. per cent.	2·0	2·1	2·8
Acetone	Normal		
Inorganic P. mg. per cent. ...	1·6	1·4	1·4
Haemoglobin mg. per cent. ...	55·0	42·0	25·0

A urine sample was positive for haemoglobin and a few cells were present.

That evening the owner was worried about the case and 3 pints of saline were injected. Her membranes were now rather cold and icteric. On January 14th her temperature was 104° F. and pulse 108. Four pints of saline were injected. On January 15th she was down with a foetid diarrhoea and a temperature of 99.4° F. Her pulse rate was 108, her head was turned to her left flank, and her breathing was fast and shallow. A haemoglobin estimation showed 25 mg. per cent. by Sahli. Prognosis was grave, although initially she did not appear very ill, and a blood transfusion of 5 pints of citrated blood

was administered with 2 pints saline. The blood was collected once again from a dry cow being fattened. That afternoon the patient was up and appeared brighter, but she had no appetite or thirst. Her pulse rate was 114 and her temperature 99.8° F. She was found dead early the following morning.

Post-mortem Findings

The carcase was uniformly pale and very jaundiced, resembling that of a Jersey. There was some free abdominal fluid and the bladder was full of highly pigmented urine. The kidneys were normal except for one or two retention cysts. The intestines showed patchy inflammation from the abomasum to the colon. Mesenteric glands were enlarged and oedematous as were the carcase glands. The spleen appeared normal but the liver was yellowish in colour and showed several pale areas on its ventral border. The heart was pale and flabby and there were some haemorrhages along the course of the intercostal vessels. The lungs were markedly emphysematous.

Pathologist's Report

The liver from this cow was slightly swollen and pale yellowish-brown in colour. Microscopical examinations showed a uniform fatty change with some acute centri-lobular necrosis. The small subcapsular lesions were areas of intense fatty change and not ischaemic infarcts. Smears and cultures of the liver failed to show any evidence of bacterial infection.

The lungs showed a marked interstitial emphysema which was probably a terminal change. The heart showed a number of petechial haemorrhages and the myocardium was very pale in colour. No lesions were found in the portions of intestines and kidneys submitted for examination.

The urine showed the characteristic changes of a haemoglobinuria and preparations of the deposit failed to show any red cells. No renal casts were detected.

Histological section of the kidney showed a very small mild focal infiltration of the interstitial tissue with small mononuclears. There was no marked fibrosis, and no changes of significance in the epithelium of the convoluted tubules. The foci of infiltrating cells were very small and appeared to be located, in particular, around the glomeruli.

The absence of ischaemic infarcts in the liver appears to eliminate the possibility of bacillary haemoglobinuria due to *Clostridium haemolyticum*. The general findings in the organs, together with the results of blood examinations, are consistent with post-parturient haemoglobinuria of rather obscure aetiology.

Discussion

The three cases described occurred on one farm where the land is considered good. No similar cases have been encountered on this farm before and the present owner has farmed there for the last 25 years. The winter feeding consists mainly of hay, and kale or roots for maintenance and 1 gal., and a home-grown concentrate ration consisting of ground oats, barley and whole beans fed at the rate of 3 to 4 lb. per additional gal. A similar ration has been fed for many years. Iodised mineral licks are supplied to each cow. The incidence of milk fever in this herd of approximately 26 Shorthorn cows is negligible, and only three cows have been treated in the past eight years. It may be significant that the three cases of haemoglobinuria described occurred during very frosty weather with day temperatures at, or about, freezing.

Several authors have described the occurrence of haemoglobinuria in dogs, pigs and calves due to exposure to cold or following the excessive consumption of cold water. The cause is not the same as that of paroxysmal haemoglobinaemia in man (Hutyra, Marek & Manninger, 1946). The three cases described drank twice daily from a trough in the yard, and during frosty weather they must have consumed large quantities of iced water. They were all high producing cows nearing the peak of their lactation and their water requirements must have been heavy.

When the first case was encountered diagnosis was uncertain as no similar condition had been seen apart from piroplasmosis. No ticks were present and babesia were absent from blood smears. The disease also appeared too acute for red-water fever, although the writer had seen severe attacks in susceptible animals imported into tick infested areas. On this particular farm the owner stated that it was difficult to find a sheep tick at shearing time, following the introduction of the more modern dips.

Bacterial haemoglobinuria due to *Cl. haemolyticum* was considered but, although there was a temperature reaction (suggestive of an infection), there is a seasonal incidence with this disease. Hagan (1950) and Udall (1954) in America give the seasonal incidence as June to November, with sporadic cases throughout the winter. A case was reported in this country by Saltys & Jennings (1950).

Haemoglobinuria is also seen in leptospirosis—mainly the acute type (Udal, 1954; Erdheim, 1953), but even in the acute disease, death is uncommon and the animals are rarely severely ill. Changes in the consistency of the milk are usual in this condition, although they also occur occasionally in parturient haemoglobinuria. So far leptospirosis has only been reported in calves in this country. (Field & Sellars, 1950; Ingram *et al.*, 1952).

Several other causes of haemoglobinuria are recognised apart from the chemical poisons. Kale and rape poisoning (in winter) have been reported on several occasions (Rees Evans, 1951; Gregor, 1952). No rape was being fed to these cows, although all three cases were being fed three to four sticks of kale three cases were being fed 3 to 4 sticks of kale per cow. Previous reports of poisoning have been in animals grazing these forage crops, and recognised cases have not been so severe, and recovery has been spontaneous on withdrawal of the offending feed.

While the phosphorus levels are low they are not nearly as low as the levels of Madsen and Neilson's

cases, although very similar to the level observed in the case produced by these authors experimentally. Fish (1929) records a 25 per cent. lowering of the inorganic phosphorus levels of recently calved cows, and a further 38 per cent. decrease in milk fever cases. This finding might be responsible, at least in part, for the lowered phosphorus levels in the two cases sampled. The low magnesium level in Case 2, and low calcium levels in Case 3 are probably coincidental.

Summary

1. Three cases of parturient haemoglobinuria (haemoglobinaemia) have been described occurring in Buckinghamshire—one was fatal.

2. Blood samples from two of these cases revealed a low inorganic phosphorus level. One showed a low magnesium level and another a slightly low calcium level. These latter were, in all probability, coincidental.

3. All cases occurred in severe wintry weather.

4. The diet consisted of hay and kale and roots as a maintenance ration, with a home-grown production ration of ground oats, barley and whole beans. A similar ration had been fed for many years.

5. Blood transfusion was carried out in two cases.

6. It is suggested that the cause of haemoglobinuria in these cases may have been a low blood-inorganic phosphorus level, with an excessive consumption of chilled drinking water as a precipitating factor.

Acknowledgments.—My thanks are due to Mr. G. H. Arthur of the Royal Veterinary College, Streatley, for his interest and advice in the cases described, to Mr. P. L. Ingram of the Royal Veterinary College, Streatley, for the pathologist's report, and to my assistant, Mr. J. H. S. Arnold. I wish to thank also the Biochemistry Department of the Ministry of Agriculture laboratory, Weybridge, for the reports on blood samples.

References

BODDIE, G. F. (1949). *Vet. Rec.* **61.** 86.
ERDHEIM, M. (1953). *North Amer. Vet.* **34.** 22.
FARQUHARSON, J., & SMITH, K. S. (1938). *J. Amer. Vet. Med. Ass.* **93.** 37.
FIELD, H. I., & SELLERS, K. C. (1950). *Vet. Rec.* **62.** 34.
FISH, P. A. (1929). *Cornell Vet.* **19.** 147.
GREGOR, A. (1952). "Proceedings of Conference on Metabolic Disorders," p. 132. B.V.A., London.
HAGAN, W. A. (1950). "The Infectious Diseases of Domestic Animals," p. 300. Comstock Publishing Company.
HUTYRA, F., MAREK, J., & MANNINGER, R. (1946). "Special Pathology and Therapeutics of the Diseases of Domestic Animals," p. 130. Baillière, Tindall & Cox, London.
INGRAM, P. L., JACK, E. J., & SMITH, J. E. (1952). *Vet. Rec.* **64.** 865.
JARRETT, W. F. M. (1952). *Ibid.* **64.** 429.
MADSEN, D. E., & NEILSON, H. M. (1939). *J. Amer. Vet. Med. Ass.* **94.** 577.
——— & ———. (1944). *Ibid.* **105.** 22.
REES EVANS, E. T. (1951). *Vet. Rec.* **63.** 348.
SOLTYS, M. A., & JENNINGS, A. R. (1950). *Ibid.* **62.** 5.
UDALL. (1954). "The Practice of Veterinary Medicine." p. 437. Baillière, Tindall & Cox, London.
WALLACE, W. R. (1926). *Vet. Rec.* **6.** 1035.

The Arton Wilson Committee Report

(*Leading article, continued from page* 233)

It is of interest, finally, to quote a portion of the Report dealing with regional administration, together with the reservation made by Professor Roberts in this connection. The passage reads:—

Some witnesses have also argued that the technical services can only work efficiently if their senior officers remain directly responsible to their technical superiors at Headquarters. We should not dispute this argument in so far as it relates to technical matters, but with a more general application it is amply contradicted by experience in almost every field of public administration. It is pertinent to note that other Government Departments with Regional Controllers and outstationed technical services, all follow the orthodox system.

We were particularly impressed by the evidence of the Ministry of Works, who had precisely the same problem to face. Their experience has shown that the organisation we recommend can work smoothly. In that Ministry engineers, surveyors, architects and builders are working under Regional Controllers, but retain certain responsibilities for the technical execution of their work, and the right of direct access to their technical superiors at Headquarters on technical matters. We recommend that in the same way M.A.F.F. technical staff should have direct access to their superiors at Headquarters on technical matter.

Reservation by Professor E. J. Roberts

Professor Roberts considers that, since we face a period in which technical and scientific men have such important rôles to play, it would be unwise to place under any Regional Administrator the technical heads of the advisory, veterinary and lands services. He considers this would not only affect their career value but that, in the case of the advisory service, the relative lowering of their status might reflect adversely on the esteem held for them by farmers—and this esteem is most vital for the N.A.A.S. Professor Roberts considers there is also a danger that, since there is often no clear line between what is administrative and what is technical, the regional office might become an extra "post box" on the way to London, thus restricting the free flow of traffic between the technical heads in the regions and at Headquarters.

It must be suggested that the experience of the Ministry of Works is hardly apposite when applied to veterinary research and other specialised activities of our profession; and when the subject comes finally before the House of Commons, it is to be hoped that the Government will pay more attention to Professor Roberts's observation than did the Committee.

International Traffic in Livestock*

BY

J. N. RITCHIE

Chief Veterinary Officer, Ministry of Agriculture, Fisheries and Food

THE subject of the international traffic in livestock has been causing a good deal of concern in recent years, mainly because of the much greater facilities for the transport of livestock and also because of the increase in international traffic of other kinds. Since the end of the war the Ministry of Food has released its control of the importation of meat and various other foods, and this traffic is now entirely in private hands. From a disease prevention point of view, it is therefore considerably more difficult to control. As far as livestock are concerned, our import regulations are quite strict; indeed we are criticised from many quarters because they are so strict. We are often censured because of the admirable regulation which requires that imported dogs and cats shall be quarantined for six months before they are allowed freedom in this country, and yet since the last outbreak of rabies was finally dealt with in 1922, we have had some 23 cases of rabies in dogs undergoing quarantine. I think this is sufficient indication that any relaxation of such precautions would leave us in a very bad situation over rabies, which not only has its implications in the domestic animals, but has also a very serious public health significance. Many countries are using vaccines fairly successfully to control this disease, and they try very hard to persuade us to use the protection of vaccine as an alternative to quarantine. This is a matter which we have strenuously resisted and which, I hope with the full support of the whole profession, we shall continue to resist.

With regard to farm livestock, the regulations, which in practically every country exist to control the importation of stock, were framed at a time when diseases like rinderpest, pleuro-pneumonia, foot-and-mouth disease and glanders were the real dangers. There has been no outbreak of rinderpest, pleuro-pneumonia or sheep pox since those diseases were eradicated from this country in the last century. This is an indication of the success of the restrictions we have imposed upon the importation of livestock. Yet, during the same period, as a result of chance importations of stock, rinderpest has occurred in some countries which were otherwise completely free. For example, rinderpest occurred in Belgium in 1920 when some Zebu cattle were transhipped at Antwerp *en route* for Lisbon and Brazil. Some of these animals died, but the condition was not diagnosed until some other cattle which had used the same premises and had since been distributed throughout the country, developed rinderpest. A similar incident occurred in Australia in 1923 when some cattle were brought into a western port, in a ship which must have been infected. In this case suspicion fell upon pigs loaded as ship's stores at Singapore. Contact with local cattle took place and as a result 28 outbreaks of rinderpest occurred in Australia. We must therefore maintain a very careful watch on the importation of stock into the country. We have not, of course, remained free from foot-and-mouth disease, but this has been for entirely different reasons, and we have never, in recent years, introduced the disease through imported livestock.

Large numbers of cattle, sheep and pigs are imported into Britain from the Channel Islands, Ireland and the Isle of Man, and this importation is controlled to some extent because it has been found that imported animals, hawked from market to market, proved in the past to be a very important feature in the spread of infection, such as that, for instance, which occurred in a series of outbreaks of foot-and-mouth disease in the early 1920's. Nowadays we regulate this traffic in such a way that the animals at any rate cannot move into successive markets. If they do go to a market, and from there to a farm, they must be detained there for six days. This method has been quite successful. We also have regulations which allow us to bring in pedigree animals from the Dominions. These animals are required to be registered in a Herd Book which is recognised in this country, and the necessary conditions as to quarantine, and tests relative to the country from which the animals are coming are prescribed. We have always resisted the introduction of cattle from Australia because pleuro-pneumonia still exists in that country and, although the incidence there is more or less localised, a considerable movement of stock takes place out of the area in which the disease is commonly found. We have, however, imported pedigree animals from Canada and New Zealand, and some Hereford cattle are on their way here from New Zealand at the present moment. In the case of cattle from any other country, the regulations require that the cattle should come in only for exhibition or for an exceptional purpose, and even then special safeguarding conditions are imposed. Quite a large number of animals come in for exhibition at the various zoological collections throughout the country. Such animals are always quarantined for at least 28 days in the zoo to which they go and are only allowed, in the first place, to go to an urban zoo. In point of fact, there has been very little difficulty with any of the animals which have come in this way. In this context it is worthy of mention that rinderpest was introduced to the Zoological Gardens in Rome in 1949 by animals which had not been successfully quarantined. As a result all susceptible stock, including many valuable specimens, had to be slaughtered.

Where it is proposed to import animals for an exceptional purpose we require that such a purpose

* Adapted from a Paper read to the Midland Counties Division of the British Veterinary Association on July 28th, 1955.

should be of some benefit to agriculture in general or to a particular breed and not merely that one individual importer would benefit by the introduction of a particularly good bull. Some years ago, for instance, Friesian cattle were brought from Holland and made very high prices. The very careful precautions which were taken with these cattle are of some interest.

First of all care had to be taken as far as foot-and-mouth disease was concerned because they were coming from a country where a good deal of vaccination was being done but where very few outbreaks of disease existed at that time. The possibility existed that because of the vaccination the consignment might include animals which, while they were not showing any evidence of disease, might yet carry infection. The first step, therefore, was to collect the animals from a large number of farms, mix them together, and isolate them on premises in Holland for three weeks before they were allowed to come over here. If some of the cattle were infected, there was a good chance that some of the susceptible ones would show obvious symptoms of disease and the condition could be diagnosed. The next step was that after their arrival in this country they were put into quarantine together with a number of home-bred bullocks which, since they would be highly susceptible, could act as indicators of any infection which might be present among the imported stock. There were, of course, other precautions to be taken to protect ourselves against other less diffusible but more insidious diseases.

Whereas all the earlier importation restrictions imposed by various countries were directed against these major highly diffusible diseases of livestock, greater attention is now paid to the health of stock generally, and we are now faced with importation regulations which require freedom from diseases like tuberculosis, brucellosis, and Johne's disease. It is a simple matter in international trade to abide by these rules if there is a reliable test for the disease for which certification is required. There are such tests for tuberculosis and brucellosis, but we are faced with considerable difficulty with many other diseases for which certification is required. It is difficult for us to be sure, for example, that stock coming from a great number of countries are free from Johne's disease, and we are also in difficulty in certifying the stock that we export. We have recently been attempting to use the complement fixation test which is being developed at Weybridge for this purpose.

Introduction of New Diseases

Another very difficult problem is that of the possible introduction into this country of diseases which, to the best of our knowledge, do not and have not existed here. Our American colleagues say there is no sound reason why we should object to taking their stock, particularly as they have no foot-and-mouth disease or rinderpest, nor any of the major diseases. But they have, for instance, a type of brucellosis which, as far as we know, is absent from this country. This is the type of brucellosis caused by *Brucella suis* and it is on record that in the United States and other countries where this disease occurs commonly among pigs it does occasionally affect catle. There has also appeared in the United States a virus disease known as Blue Tongue which commonly affects sheep but for which cattle can act as carriers. Our most recent information about this disease is that some 10 States have become involved. Until it appeared in America it was believed that the only country in which this condition existed was Africa, but by some extraordinary means which has never been elucidated, the condition has reached the United States and has spread there. It had, indeed, spread to some considerable distance before it was first recognised.

In the last few years we have encountered two or three new diseases. Fowl pest was re-introduced in 1947, a problem which unfortunately is still with us. Except that we had our attention drawn to it at a fairly early stage, I think it might well have been very widespread throughout the country before anything was done about it. In the United States this disease, which was supposed to be confined originally to California, had in fact spread to several States and involved many hundreds of flocks before it was recognised. The condition, then described as pneumoencephalitis of poultry, was in fact an infection with the virus of Newcastle disease. When comparison is made between the system of control and the use of vaccination in that country as opposed to our system of slaughter, disinfection and a modicum of control, it is not surprising since the condition had spread so widely throughout the United States that a slaughter policy could not be carried out there with any hope of real success.

It is very important that one should be assured there is a good veterinary service in any country which is either protecting itself against these diseases or which is certifying freedom from them. There are countries from which it would be extremely difficult for us, knowing the kind of service that exists, to accept any certificates we might possibly ask for. Similarly, if any diseases were to be introduced into this country, we should have to depend very much indeed on veterinary surgeons in private practice and on our own field staff, to recognise these diseases and draw them to our attention so that we might deal with them as promptly as possible.

Regarding the export of animals from this country we have to certify animals which go through our quarantine stations before they are sent to a number of countries—mainly the Dominions. We are extremely anxious that when we do certify freedom from a variety of conditions, the certificate is supported by the evidence of the animal when it reaches the other side. In the last few years the record of our veterinary certification has been very satisfactory, with the possible exception of a number of cattle which were exported to Canada and were there found to be affected with parasitic mange.

In connection with imports, there are many other difficulties besides the movement of livestock with which we have to contend. We are frequently pressed to agree to the importation of meat of one kind or another from many countries. Until quite recently the only control we exercised was to prevent the

introduction of meat and meat products from Europe, since there was practically no opportunity of getting meat from other really dangerous sources at the time the regulations were made, *i.e.*, in 1926. More recently, further regulations have been made which prevent the introduction of meat and meat products except from countries which are reasonably safe, or where conditions are imposed which render the import as safe as possible. This last applies at present to the importation of meat from the Argentine, because if we are to find enough food to feed the people in this country, a certain amount of risk must be taken. We have entirely set our face, however, against any countries where such diseases as rinderpest, pleuro-pneumonia, vesicular exanthema, or Teschen disease of pigs exist and we have resisted most of these requests for importation.

This is a very real problem because we know from experience that we have frequently introduced foot-and-mouth disease into this country through swill containing South American meat, swine fever from American pig products, and fowl pest from imported poultry carcases. In the United States the feeding of garbage to pigs was probably the most important factor in the spread of vesicular exanthema. This is a disease against which we endeavour to take every possible precaution, because it is one which cannot be differentiated clinically from foot-and-mouth disease. We have also tried, so far as is practicable, to prevent the introduction of poultry diseases by prohibiting the importation of carcases and eggs, yet in the last year or so, we have had one or two outbreaks of epidemic tremor in poultry.

We have recently been faced with another problem which follows advances in technical skill. It is now possible to transport cattle semen in deep freeze over very long distances, and our regulations, based on a report by the Oaksey Committee, prevent us from bringing in semen from any country which has any of the major virus diseases. They also restrict us, as far as possible, to accepting only the semen from bulls which are at artificial insemination centres. This is a trade which may very well develop to a considerable extent and although we have had only very few importations so far, we have successfully exported semen to countries as far away as New Zealand and Australia. The new techniques make it possible to transfer semen in a fertile state across the whole of the world. Some of the countries which would possibly accept semen from here have laid down such stringent requirements that they are very nearly impossible to meet. I think some of them have probably done so to avoid such diseases as *Vibrio foetus* infection which is not destroyed in the deep freeze and for which there is, as yet, no good objective test in the male. These countries seem to be trying to ensure that there is absolutely no risk before they take the material.

In the past it was only necessary for us to guard against some of the major diseases, partly because of the lack of knowledge of others, but mainly because the handling of these major diseases was of first importance. Nowadays, with our advance towards a more positive state of health in our livestock, we have to be more meticulous with many less diffusible diseases than was the case in the past. We must also be extremely careful to ensure that we do not bring animals from dangerous sources; animals for instance, which show no evidence of disease in the country where they are at present but which in this country might develop dangerous manifestations of disease.

Reply to Discussion

Replying to points raised in discussion, and in summing up, the essayist dealt with the following further matters:—

There are a whole lot of implications arising out of the question of the carriage of livestock by air. First of all, there are the various transit Orders which require certain conditions for the transit of animals by road, rail and sea. The Minister now has power to make regulations for the transit of animals by air in the same way, but these regulations have not, as yet, been framed. There has so far been very little traffic in stock transported by air, except for a quite extensive trade in thoroughbred horses going to various parts for service. Air transport also raises a point in connection with quarantine for rabies. Whereas from a distant country the sea voyage may take weeks it now takes only a matter of hours, with the result that the quarantine period is, as it were, reduced by the shortening of the time of the journey. During the last few years we have had in quarantine two animals which have developed rabies after more than six months. In one case the animal was seen to be ailing towards the end of the quarantine period but died just outside this period. In the other case the owner did not happen to come for the animal at the end of the period and the dog developed rabies shortly afterwards while it was still in quarantine. Despite this I think that for all practical purposes the six-month period is still reasonably satisfactory. There is a further point in connection with rabies; I am informed that if an animal was incubating the disease before it was vaccinated it would develop symptoms at an earlier period than if it had not been vaccinated.

In Mexico, where they depend on bullocks for transport and for the work on farms, the fact that they lost their bullocks as a result of the foot-and-mouth outbreak so conditioned the Mexicans against the slaughter policy that until the Americans were able to produce mules as an alternative the whole policy ran a considerable risk of breaking down. This also probably contributed to the change of policy which combined slaughter with the use of vaccine.

In connection with the Olympic Games to be held in Australia next year the Australian authorities were concerned about the possible introduction of glanders, infectious encephalomyelitis and infectious equine anaemia. Equine encephalomyelitis is an extremely difficult disease to handle. We have occasionally had applications for the importation of thoroughbred brood mares from such places as Malaya, but I am informed from reliable sources that, although the incidence of this disease amongst horses in that part of the world is low, there are various reservoirs of infection. This makes it extremely difficult for the authorities to be quite safe in certifying horses as being completely free from any chance of infection. The disease is one from which we are not running

much risk, however, since we do not have the normal vectors which transfer it.

With regard to psittacosis, until some years ago the Ministry of Health controlled the importation of parrots and other birds of that type. They revoked this control, however, because the virus of psittacosis, or at least one similar to it, was found to be quite common in birds in this country, as for instance in the pigeons in Trafalgar Square. We then found that as a result of this revocation extremely large numbers of budgerigars were imported, and that in these there was a mortality rate of up to 60 per cent. Following this we had two outbreaks of fowl pest, one of which originated from budgerigars and the other case from parakeets. In addition, we had an outbreak of psittacosis amongst poultry, the origin again being from certain members of the parrot family. It was because of these outbreaks that we then made an Order to control the importation of these birds.

The Problem of Scrapie

Until recent years we exported sheep to Canada, Australia, and New Zealand, and there is no doubt that outbreaks of scrapie occurred in each of these countries from sheep exported from here. Subsequently, the disease occurred in the United States, allegedly from Canadian sheep which had originated in Great Britain. All these countries have now completely banned our sheep because of this disease.

It is extremely difficult to certify a flock completely free from scrapie. Experimentally, the incubation period is from four to eight months or even longer, while, according to the work done by Greig and others at Moredun, the natural incubation period may be a year or more. A great deal of research work is being done on this disease at present and the original reports suggested that it was due to a virus which behaves in a peculiar way compared with other viruses. The infective material has been heated or treated with 0.35 per cent. formalin and has been found to remain infective. There is at present very little we can do to alter the views of the importing countries about our sheep, and, as in everything concerned with export and import, it must be the importer who has the final word as to what the conditions governing importation shall be.

The main symptom of epidemic tremor, very few outbreaks of which have been seen here, is progressive paralysis of the legs followed by tremor of the head and neck.

Fowl pest is a disease which is very easily transmitted and despite the existence of such diseases as crazy chick disease, epidemic tremor and pullet disease, all sorts of disease conditions proved in the end to be fowl pest, so one is well advised to keep fowl pest in mind as the main possibility.

VETERINARIAN'S RACING SUCCESS

It has been reported in the press that Mr. R. B. Wood's horse Count Clown won at Uttoxeter recently. Mr. Wood is a popular owner whose horses have a considerable local following.

Current Literature

ABSTRACTS

Fluorosis in Nalgonda District, Hyderabad-Deccan. SIDDIQUI, A. H. (1955). *Brit. Med. J.*, December 10th, 1955. 1408-1413.

This paper by a lecturer in medicine in Osmania Medical College mainly consists of a detailed report of the disease in human beings. There are some points of veterinary interest. The source of water in the area is wells. Twenty-eight samples of water were analysed for their fluorine content, the results varied from 5.2 to 11.8 parts per million. The excessive heat accounts for high consumption of water. The nutritional level of both human beings and animals was low. The diet of the people was deficient in animal protein, fat, calcium and vitamin A and C.

Skeletal changes of an advanced degree were noticed among the cattle. Symptoms of emaciation, weakness and laboured gait were common. The animals were reported unfit for field work after three years.

Poultry are relatively resistant to fluorine intoxication, but they were affected because of the high fluorine content of the water and the effect on water intake of the excessive heat.

Of 32 adults whose teeth were examined, 15 who resided in the endemic areas during the period of calcification of permanent teeth had mottled enamel (*i.e.*, dental fluorosis). Three patients were edentulous. The remaining 14 who had migrated from non-endemic areas after their permanent teeth had calcified had normal teeth. An illustration of the dental lesions in one patient presents a picture closely resembling that of dental fluorosis in the incisor teeth of cattle. The incidence of mottled enamel was found to be proportional to the fluorine content of the drinking water.

Urinary excretion of previously stored fluoride can continue for a fairly long period. In one case studied the urinary fluoride level was 3.4 p.p.m. ten years after the patient had left the endemic area.

(*Abstractor's note:* This urinary fluoride figure is devoid of significance unless the patient's intake of fluorine at the time of sampling was known).

G.F.B.

An Outbreak of Q Fever in a Rural District of Central Wales. REPORT (M.R. COUNCIL) (1956). *Mon. Bull. Min. Hlth Lab. Serv.* **15.** (1). 10-17.

The authors have described an outbreak of 15 cases of Q Fever in a rural district in Cardiganshire. Most cases showed a sudden onset, with severe headache and aching back or limbs, followed by pyrexia with profuse sweating. Some atypical cases occurred.

The outbreak occurred during the lambing season, and it was found that 13 of the 15 patients had had either direct or indirect contact with ewes that were lambing. When blood samples were taken from 5 of the flocks a few of the sheep showed low levels of complement-fixing antibodies to *R. burneti*, suggesting that they may have acted as the source of the infection in man. Alternatively, both men and sheep may have been infected from some third, unidentified source, such as infected *Ixodes ricinus* ticks.

E. A. G.

The Victoria Veterinary Benevolent Fund

A meeting of the Council of the Fund was held at No. 10, Red Lion Square, London, W.C.1, on January 6th, when the following members were present :—

Mr. H. W. Dawes (President) in the chair, Mr. E. Clark, Major J. J. Dunlop, Mr. G. N. Gould, Professor J. McCunn, Captain T. M. Mitchell, Professor L. P. Pugh, Messrs. J. N. Ritchie, H. Sumner and Captain W. Watt. Mr. John A. Flynn (visitor) was also present, and Mr. C. W. Francis, secretary, was in attendance.

Minutes

The Minutes of the previous meeting, held on October 14th, 1955, having been published in THE VETERINARY RECORD, were taken as read and signed as correct.

Apologies for Absence

The Secretary announced apologies for absence from the following : Mrs. D. I. Glover, Messrs. R. E. Glover, L. E. Hughes, Professors R. Lovell, W. M. Mitchell, R. E. Mullaney, Mrs. F. M. Ritchie, Messrs. Arnold Spicer, J. F. D. Tutt, Captain A. Whicher, Professor W. L. Weipers and Major W. H. Wortley.

Correspondence

The Secretary reported :—

(*a*) That under the terms of the will of the late Miss Isabella Prentice Brown, 55, York Place, Perth, the Fund had benefited to the extent of £1,050. Miss Brown, who was a member of the Ladies' Guild, died on November 4th, 1954.

(*b*) The receipt of a letter dated December 29th, 1955, from the treasurer of the North of England Veterinary Medical Association, stating that as a result of their annual dinner dance held in Morpeth recently, the Association were pleased to hand over to the Fund the sum of £84 16s. 7d. This news was received with pleasure.

(*c*) That the following nominations to Council had been received :—

(i) Herts and Beds Veterinary Society, Mr. E. Clark ;

(ii) Society of Women Veterinary Surgeons, Miss V. Tillemont-Thomason ;

(iii) Southern Counties Veterinary Society, Mr. J. F. D. Tutt.

Investments

The treasurer submitted the following report :—

(*a*) That with the concurrence of the Executive Committee, the £1,050 received by the Fund under the will of the late Miss Isabella Prentice Brown, had been invested in the purchase of £1,133 5s. 7d. North of Scotland Electricity 4 per cent. guaranteed stock, 1973–1978.

(*b*) That he had instructed the bank to invest the balance of £207 6s. 2d. standing in the donations account in the purchase of £248 16s. 4d. 3 per cent. Funding Stock, 1959–69.

Captain T. M. Mitchell moved that the report be approved. This was seconded by Mr. J. N. Ritchie and unanimously carried.

Accountant's Report

The Secretary read the following report :—

Since the previous meeting of Council the following legacy, donations and special subscriptions have been received :—

	£ s. d.	£ s. d.
Legacy		
Miss I. P. Brown		1,050 0 0
Donations		
COLLECTING BOXES		
Anon.	4 3 4	
Brancker, Miss W. M. ...	1 14 9	
Central Veterinary Society—		
4 0 6		
3 12 6		
2 12 2		
	10 5 2	
Chambers, F.	2 11 0	
East Midlands Division ...	3 6 0	
Eastern Counties Veterinary Society	4 11 7	
Furniss, R. H.	1 14 6	
Hewer, Spriggs & Wilson ...	1 10 0	
Hopson, C. G.	5 3 6	
Lincs and District Division...	5 9 0	
Mid-West Branch, B.V.A. ...	10 0 0	
Midland Counties V.M.A. ...	1 10 6	
Morton, J. T.	1 10 6	
North of England V.M.A. ...	5 13 4	
North of Scotland Division...	6 6 0	
Pasfield, J.	1 1 0	
Royal Counties Veterinary Association	6 6 0	
Russell, Miss E. E. B. ...	2 11 0	
Scottish Metropolitan Division	3 7 4	
Shipley & Son	1 2 0	
South-Eastern Veterinary Association	8 10 0	
Scottish Regional Group, Association of Veterinary Teachers and Research Workers	1 10 0	
Southern Counties Veterinary Society	13 0	
Sussex Veterinary Society ...	7 10 0	
Western Counties Veterinary Association	7 16 0	
White, J. B.	2 2 0	
Wortley, W. H.	16 3	
Yorkshire Veterinary Society	9 10 0	
North Wales Division ...	6 5 0	
		124 9 9
Eastern Counties (Shipley Bowls Tournament)	6 14 1	
Heatley, T. G.	1 0 0	
Ladies' Kennel Association ...	5 5 0	
North of England V. M.A. (Dance)	34 16 7	
Oliver, D. F.	2 0 0	

Rew, P. G. (balance remaining from presentation on retirement from Animal Health Division)	4	15	0		
Richmond Dog Show	7	7	0		
Whicher, A.		10	6		
				62	8	2
				£186	17	11

SUBSCRIPTIONS

Lancashire Veterinary Association	10	0	0		
Society of Practising Veterinary Surgeons	10	0	0		
Society of Women Veterinary Surgeons	2	2	0		
Southern Counties Veterinary Society	7	7	0		
				£29	9	0

On the proposition of Mr. J. N. Ritchie, seconded by Mr. E. Clark,

It was resolved that the warm thanks of the Council be accorded to the respective donors.

Christmas Gifts

The secretary reported :—

(*a*) That the appeal in THE VETERINARY RECORD last month produced the handsome sum of £82 19s.

(*b*) That the Executive Committee, in collaboration with Mrs. D. I. Glover, approved for distribution during December sums ranging from £10 to £5 to 40 recipients, as follows :—

	£	s.	d.
8 at £10 ...	80	0	0
13 „ £8 ...	104	0	0
15 „ £6 ...	90	0	0
4 „ £5	20	0	0
	£294	0	0

A lady member of the profession had personally delivered a gift of poultry to one of the Fund's beneficiaries living in the neighbourhood.

Letters from the beneficiaries expressing their sincere thanks for these gifts having been reported to the meeting, it was agreed that such letters be passed to the treasurer of the V.V.B.F. Ladies' Guild so that the Guild members might know how much their work is appreciated.

Cases

No. 243, widow, aged 48. One son, aged 25; two daughters, 22 and 16. Son now completed his national service and practising his profession.

No. 266, widow, aged 89, one daughter, 55. The mother died on December 3rd, 1955 ; the daughter, in very poor health, submitted application as her only income was that received from the national assistance board.

It was resolved that the above cases be referred to the Executive Committee, with power to act.

No. 275, widow, aged 50, two sons, aged 21 and 18, both working. After hearing the secretary's report in regard to a visit made by a member of the Ladies' Guild in November last, it was agreed to postpone further consideration of this case until the next meeting.

No. 281, widow, two sons, aged 22 and 15. At the request of Professor P. E. Mullaney, consideration of this case was deferred to the next meeting.

No. 301, M.R.C.V.S., aged 57, seriously ill, three children, 24, 21 and 18. This case was brought forward for review in accordance with the resolution passed in January, 1955. A letter from the recipient's wife having been read, *it was unanimously resolved* that the present grant of £4 per week be not disturbed for a further 12 months.

No. 302, widow, aged 61, daughter aged 35. Only income 43s. per week from national assistance board, and our grant of 9s. 6d. per week. A letter was received from the Halifax Council of Social Service asking if the Fund could help to clear off outstanding debts for clothing incurred by the daughter, who had been endeavouring to pay these off herself. Continued ill-health had resulted in her complete collapse, and following a major operation, she died on December 1st. Mother greatly distressed over the accounts.

It was resolved that the debts amounting to £14 15s. 1d. be paid by the Fund.

No. 306, widow, aged 45, three sons, aged 16, 13 and 9. Applicant asked if the Fund could help her in connection with the children's education. The Executive Committee reported that it had made her a special grant of £50 to tide her over any temporary difficulties.

It was resolved :

(*a*) That the action of the Executive Committee be unanimously approved.

(*b*) That having considered the request in regard to the children's education, the views arrived at by the Council be conveyed to Mr. R. E. Glover and on his report, the Executive Committee be authorised, if necessary, to take early action in the matter.

No. 307, M.R.C.V.S., aged 51, one son aged eight and a half years. Has been off duty since April, 1954, owing to serious illness. Only income that earned by wife. Executive Committee reported having made a temporary grant of £3 per week until Council Meeting.

The action of the Executive Committee was confirmed, and it was agreed to continue the grant.

No. 308, widow, aged 69. Receiving £2 3s. 6d. per week from national assistance board.

It was resolved that the National Veterinary Benevolent and Mutual Defence Society be asked if they will be good enough to relieve the Fund of this case.

No. 309, M.R.C.V.S., aged 44, married. This member fractured his leg on September 11th, 1955. The Executive Committee, in the special circumstances, made him a special grant of £20.

The Council approved the decision of the Executive Committee and instructed the secretary concerning the action to be taken on the letter recently received from the applicant's late employer.

No. 311, daughter of late member, aged 58. Receiving assistance from the national assistance board.

(*Concluded at foot of col. 1 overleaf*)

News and Comment

RUSSIAN LEADERS' GIFTS TO THE ROYAL FAMILY

As readers will have seen already in the press, two Mongolian horses, a hack for the Duke of Edinburgh, and a pony for Prince Charles, have been presented by the Russian leaders Marshal Bulganin and Mr. Khruschev. We are indebted to Mr. George S. Forbes, M.R.C.V.S., who had the two horses temporarily in his care, for the following notes about them.

ZAMMAN stands about 14.2 h.h. and *MELEKUSH* about 15.2 h.h. They are both entire horses, identical in colour, being a dark palomino colour with black points and black mane and tail, with a slight dorsal ridge. The whole colouring was most attractive. The one I liked better was *ZAMMAN*, the pony—his conformation being perfect in every detail. He would have won at any show in England for a pony of his size.

MELEKUSH was a nice horse also; but what struck me was the great strength of these horses. By some critics *MELEKUSH* would have been considered too much on the leg but this was countered by his amazing strength and agility. The feet and bone were excellent, and I am given to understand that these horses are typical specimens from the South Russian plains, where they were bred. They are, of course, descended from the Russian Mongolian breed and have, in my opinion, a strong influence of the Arab horse. The Russian veterinary surgeon said, however, that there was no Arab whatsoever in them. Probably there has been no Arab influence for some considerable time, but prior to the revolution in 1916 many Arab horses were used as stallions by the Czarist régime, and this influence has carried on through the years and predominates.

The other gift, made to Princess Anne, was, of course, baby Brown Bear "Nikki." At the Queen's request the bear has been left in the care of the Zoological Society of London at Regent's Park. It is of the Caucasus race of Brown Bears, and was born in the Moscow Zoopark in February of this year. It was taken from its mother on April 1st and is now being bottle- and hand-fed.

It was resolved that a grant at the rate of 10s. 6d. per week be made in this case, and that a gift of £10 from the special gift account be sent to this applicant.

No. 818, widow, aged 64, one son aged 36, and two daughters, 31 and 34, the latter married. Son contributes £4 per week. Applicant also in receipt of widow's pension of £1 per week.

It was resolved that in view of the information conveyed to the Council by Mr. J. A. Flynn, this case be further considered at the next meeting.

Date of Next Meeting.—It was agreed that this matter be left in the hands of the Officers of the Fund to arrange, if possible, for a meeting to be held on Friday afternoon, April 13th.

CATTLE PURCHASES BY THE PRINCESS ROYAL

The Princess Royal, who is establishing a pedigree Hereford herd at Harewood, bought six heifers at prices ranging from 100 to 210 guineas at the April show and sale of pedigree Hereford female cattle held at Hereford on April 23rd. Mr. Sidney Taylor, farm manager for the Princess Royal, whose Red Poll herd has won many prizes, said that they were now building up a Hereford herd and had recently purchased as a stock bull Cherry Burton Duncan.

ZOOLOGICAL SOCIETY'S NEW APPOINTMENT

Mr. R. N. Fiennes, M.A., M.R.C.V.S., has been appointed animal pathologist to the Zoological Society of London, and is expected to take up his new duties in September. Mr. Fiennes will be responsible for the *post-mortem* examination of animals which die in the Zoological Gardens, and he will also carry out original research in animal pathology. He comes to London from the University College of the Gold Coast, Achimota, where he has been Senior Lecturer in Animal Health and Veterinary Science.

Mr. Fiennes qualified at the Royal (Dick) Veterinary College and served for some 20 years in the Colonial Veterinary Service, in Uganda and Kenya. He has published a number of papers on trypanosomiasis, and has also worked on other protozoans, on helminths, bacteria and viruses. His appointment is yet another indication of the importance which the Zoological Society places upon the scientific study of animal health.

IN PARLIAMENT

MR. STEVENS (April 18th) asked the Minister of Labour if he will give figures at the latest convenient date of the number of vacancies for veterinary surgeons remaining unfilled.

MR. CARR: The number of vacancies for veterinary surgeons notified to the Technical and Scientific Register and remaining unfilled on April 16th, 1956, was 13.

MR. STEVENS (April 19th) asked the Minister of Agriculture, Fisheries and Food how many of the 5,697 veterinary surgeons registered at the end of 1954 are engaged in full-time private practice in England, Wales and Scotland; and how many are engaged or retained by Government Departments, local authorities, research institutes, schools or similar bodies.

MR. AMORY: I understand from the Royal College of Veterinary Surgeons that in the United Kingdom, approximately 2,800 veterinary surgeons are in private practice and 1,100 in the whole-time employment of Government Departments, local authorities, research institutes and similar bodies. Many of the veterinary surgeons in private practice are employed by Government Departments from time to time on a fee-basis.

Meat (Aureomycin)

MR. DODDS asked the Minister of Agriculture, Fisheries and Food for a statement giving details of

the experiments taking place under the sponsorship of his Department in connection with the treatment of meat with the drug aureomycin.

MR. AMORY: No experiments on the treatment of meat with aureomycin are being sponsored by my Department. Research sponsored by a commercial firm is being conducted by the National College of Food Technology.

MR. DODDS: Is not the Right Hon. Gentleman aware that a lot of things are being done these days by people who are only concerned with the making of profit? Will he not in a matter of this sort take some interest and, if the practice is harmful to people, put a stop to it instead of waiting for years until complaints are made in this House about it?

MR. AMORY: As I think the Hon. Gentleman knows, the sale of meat containing aureomycin is at present a breach of the Public Health (Preservatives, etc., in Food) Regulations. I think he is also aware that the use of antibiotics as preservatives is a matter which is going to be considered by the Preservatives Sub-Committee of the Food Standards Committee in the course of its review of the present Regulations.

ANTIBIOTIC PRESERVATION OF MEAT

An interesting exhibition was held recently at the National College of Food Technology, Smithfield, when a number of sides of chilled beef were exhibited in a perfectly fresh condition 53 days after slaughter, having been sprayed with an antibiotic solution. The exhibition was intended to illustrate the properties of this solution in preserving meat from bacterial contamination. The demonstrator said that only minute quantities of the preparation were required, and it had been shown that the antibiotic had no effect upon the palatability of the meat, a ton of which would need to be eaten in order to ingest a therapeutic dose of the preparation.

In this country meat treated with antibiotic preservative is not allowed to be sold for human consumption, but it seems possible that this new method of preserving food may be on the way to general acceptance. Poultry preserved by antibiotics is allowed to be sold in America.

MODEL BY-LAWS FOR SLAUGHTERHOUSES

The Ministry of Agriculture have issued model by-laws for private and public slaughterhouses under the title "Ministry of Agriculture, Fisheries and Food, Model By-laws, Series III and IIIa." The models are intended to assist local authorities in making by-laws under sections 68 and 72 of the Food and Drugs Act, 1955, for securing that slaughterhouses are kept in a sanitary condition and are properly managed. By-laws for this purpose are needed to ensure that adequate standards are maintained during the interim period which must elapse before regulations can be made under section 13 of the Act and become effective for all slaughterhouses.

The Minister is the confirming authority for both public and private slaughterhouse by-laws. When such by-laws have been made by local authorities, persons affected by them will have a month in which to make representations to the Minister, who will take them into account before confirming the by-laws.

THE FITZWYGRAM, WILLIAMS, WALLEY AND LAWSON PRIZES

The Prize Board gives notice that the subject selected for the essay competition open to candidates who obtain a registrable qualification in the Calendar year 1956 is: "Anaesthesia in Veterinary Practice."

Intending candidates are referred to the regulations for the prizes on page 480 of the Register of Veterinary Surgeons (1955) and may obtain any further information from the Registrar, R.C.V.S., 9-10, Red Lion Square, London, W.C.1.

THE BRITISH AGRICULTURAL HISTORY SOCIETY

The Society held its fourth annual conference at Florence Nightingale Hall, Nottingham University, on April 13th.

Mr. John W. Y. Higgs, Curator of the Museum of English Rural Life at Reading, who is honorary secretary of the Society, entertained members on the previous evening with a talk on the problems of identification and preservation of agricultural exhibits.

On Friday morning business affairs were speedily disposed of, and two lectures were read. The first was on the "Consolidation of the Crofting System, 1750-1850," by Malcolm Gray, Lecturer in Economics, University College of North Wales.

The second lecture was by Dr. W. G. Hoskins, Reader in Economic History, University of Oxford, and was on "Sheep Farming in Saxon England." By a careful scrutiny of the limited archaeological evidence, the study of place names, and an examination of the few extant documents, Dr. Hoskins was able to present an indication of the distribution of the sheep flocks of Saxon England. He estimated that the total number of sheep was about 6,000,000, perhaps more, or about three or four sheep to each human being.

New members of the Society will be welcome, and the only qualification is interest in the history of farming.

THE BRITISH LAND COUNCIL

At a meeting held recently at the House of Commons, a new organisation with the above title was formed. Its purpose is to employ all modern methods of propaganda to bring home to the town dweller the overwhelming importance of the countryside and of the food produced there. The British Land Council hope to encourage a degree of interest in home produced food which will make possible the supplying of three-quarters of the nation's total requirements. The first chairman of this new body is Mr. R. F. Crouch, M.P., a good friend of the veterinary profession, and it may be hoped with confidence that as part of the propaganda his Council are preparing, the vital part played in agriculture by the veterinary profession will take its rightful place.

NEW EQUINE RESEARCH UNIT

It is reported in the Dublin press that the Department of Agriculture for Eire has set up a new equine research unit at the veterinary laboratory, Abbotstown. It will be under the direction of Dr. B. T. Farrelly, some of the results of whose research work have been published from time to time in this journal. The new unit, it is stated, will maintain a close relationship with the equine research station of the Animal Health Trust, to whose scientific staff Dr. Farrelly was formerly attached.

POST-GRADUATE COURSE AT VIENNA

We are asked to make it known that in view of the fact that the 10th Congress of the International Scientific Film Association will be held at Vienna from September 23rd to 29th, the international post-graduate course of the Veterinary College of Vienna will not take place in that month.

PERSONAL

Births

MUNRO.—On April 19th, 1956, to June, wife of Ian B. Munro, M.SC., M.R.C.V.S., of 31, Kemp's Lane, Beccles, Suffolk, a daughter.

NICOL.—On April 24th, 1956, at the Jarvis Maternity Home, Guildford, to Margaret, wife of John Nicol, M.R.C.V.S., of Stoke Road, Guildford, Surrey, a sister for Janet, Helen Jane.

WICKENS.—On March 27th, 1956, to Mary, wife of John T. Wickens, M.R.C.V.S., of 24, Chelmsford Road, Shenfield, Essex, a son, Paul Philip John.

WILSON.—On April 21st, 1956, to Elizabeth, wife of P. Wilson, M.R.C.V.S., 272, Marlborough Road, Swindon, Wilts, a daughter, Ruth Mary.

Marriages

ASHFORD—MUNFORD.—On March 3rd, 1956, at St. Mary's, Clapham Common, Arthur Owen Ashford, M.R.C.V.S., of East Grinstead, Sussex, to Angela Mary Munford of Dulwich Village, London.

TAYLOR—MCLELLAND.—At Putney Presbyterian Church, on February 22nd, 1956, William Maxwell Taylor, 15, Glendower Place, Kensington, S.W.7, to Ruth Margaret Mary McLelland, 34, Heathcote Road, Twickenham.

Appointment

Professor H. R. Carne, professor of veterinary pathology and bacteriology at the University of Sydney, has been appointed a member of the Advisory Council of the Commonwealth Scientific and Industrial Research Organisation, Australia.

R.C.V.S. OBITUARY

We record with regret the death of the following member of the profession:—

MASON, John Francis, of Beeches Road, Chelmsford, Essex. Graduated Glasgow, July 20th, 1926. Died April 8th, 1956, aged 51 years.

CAPTAIN H. V. M. METIVIER

Mr. H. Gonzalez, honorary secretary of the British Caribbean Veterinary Association, writes:—

Though not in the best of health for the past few months, Captain Metivier was still active and attending to his horses up to the morning of his death, which occurred on February 20th.

He graduated from the Royal Veterinary College in 1915, whence he joined the R.A.V.C., and saw active service up to the end of hostilities. During hostilities he was awarded the O.B.E. for gallantry in action. He returned to Trinidad in 1920, and in 1923 was appointed veterinary surgeon in charge of the Government Stock Farm at Valsayn, St. Joseph. Here his main activities were devoted to improving the dairy herd, and by crossing the Friesian breed with the Zebu or Indian cattle he laid the foundation for a series of crosses, and by his work contributed a great deal to the knowledge and improvement of dairy cattle in the Tropics.

Captain Metivier resigned in 1952 as Deputy Director, Animal Husbandry in the Department of Agriculture, Trinidad. He acted as Director of Agriculture on several occasions. On his retirement, he was awarded the I.S.O. by Her Majesty, for his contribution to veterinary work.

During his career, working with Dr. Pawan of the Medical Department, he contributed a great deal to the knowledge and control of paralytic rabies in cattle. The French Government awarded him the Chevalier d'Honneur in the thirties, in recognition of his services to the French West Indies. He was also lecturer in veterinary medicine at the Imperial College of Tropical Agriculture from its inception until his death.

Captain Metivier was founder of the British Caribbean Veterinary Association and its President for many years. He was also chairman of the Veterinary Board of Trinidad and Tobago. Almost single-handedly he advanced the prestige and status of the profession in the Caribbean area, and is responsible for the respect which the profession now commands. In 1945, the American Veterinary Medical Association made him an honorary member. He was the obvious choice as representative of the profession for important conferences in the Americas and the United Kingdom.

A keen racing enthusiast, Captain Metivier at one time trained horses for the flat, was a member of the Trinidad Turf Club, and served on its management committee up to the time of his death.

Always a man of charming manner, his death is a great loss to the profession in general and to us here in the Caribbean area in particular. He leaves to mourn his loss his wife, Mrs. Sylvia Nye Metivier, a son, Hugh, also a veterinary surgeon, a daughter, Noreen, married in the United Kingdom, and three grandchildren.

Professor Bosworth writes:—

Harry Metivier will be greatly missed by a wide circle of friends on both sides of the Atlantic. Those members of the profession who were at the Royal Veterinary College from 1911 to 1915 will remember him as a popular figure who entered whole-heartedly

into all the activities of College life and went on to serve with distinction in the Royal Army Veterinary Corps throughout the first World War. After he had completed his course of study for the B.Sc. degree of London University in November, 1920, he returned to Trinidad as Government Veterinary Surgeon. The subsequent stages of his career in which he rose to be Deputy Director (Animal Husbandry), Department of Agriculture, are set out above by the Honorary Secretary of the British Carribean Veterinary Association. It is a record of sustained endeavour and solid achievement in advancing the prosperity of West Indian agriculture. His work on the improvement of livestock and disease control earned him official recognition in many quarters. He deserves special credit for the success of the campaign against paralytic rabies which at the time it was recognised threatened to become a serious menace particularly to cattle but was soon brought under control by a system of vaccination combined with bat destruction. Outside the range of his official duties he was a prominent figure in racing circles in Trinidad and served on the management committee of the Turf Club for 26 years. He became one of the leading trainers in the Colony, and headed the winning trainers' list for many years.

A man of charming personality, with an easy and unassuming manner, he radiated good fellowship and it was always a delight to welcome him when he came back to this country on periods of leave keen to work with old friends in Cambridge and elsewhere on problems of mutual interest. He will be remembered for the zeal with which he maintained the highest traditions of the Colonial Veterinary Service and ever showed himself a worthy representative of his profession.

COMING EVENTS

May

2nd (Wed.). Meeting of the Southern Counties Division, B.V.A., in the Polygon Hotel, Southampton, 7 p.m.

3rd (Thurs.). Annual General Meeting of the Central Division, B.V.A., at the Royal Veterinary College, Camden Town, N.W.1, 6 p.m.

4th (Fri.). Annual Ball of the Royal Veterinary College Students' Union Society at the Criterion Restaurant, 9 p.m.

Fifth Annual General Meeting of the Society for the Study of Animal Breeding at the Agricultural Research Council Field Station, Compton, 11.30 a.m.

General Meeting of the Lincolnshire and District Division, B.V.A., at the Saracen's Head Hotel, Lincoln, 2.15 p.m.

Annual Dinner and Dance of the Chiron Club in the Royal Hotel, Bristol, 7 p.m.

General Meeting of the Northern Ireland Veterinary Association at the Veterinary Research Division, The Farm, Stormont, 2.30 p.m.

5th (Sat.). Annual General Meeting of the Association of State Veterinary Officers in the auditorium of the Wellcome Research Institution, 183-193, Euston Road, N.W.1, 4 p.m.

9th (Wed.). Meeting of the R.A.V.C. Division of the B.V.A. at the Agricultural Research Council Field Station, Compton, Nr. Newbury, Berks, 11 a.m.

Annual General Meeting of the Sussex Division, B.V.A., at the Old Ship Hotel, Brighton, 2.30 p.m.

16th (Wed.). Annual General Meeting of the Scottish Regional Group of the A.V.T. and R.W's. in the University of Glasgow Veterinary Hospital, Bearsden Road, Bearsden, 2.15 p.m.

17th (Thurs.). Annual General Meeting of the Society of Practising Veterinary Surgeons at the Royal Veterinary College, Camden Town, 2.30 p.m.

September

16th to 22nd (Sun. to Sat.). 74th B.V.A. Annual Congress at Royal Leamington Spa.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Brecon. Upper Pendre, Llangorse (Apr. 20).

Ches. Home Farm, Eaton Hall, Congleton (Apr. 23).

Denbighs. Tyddyn Colyn, Capel Garman, Llanwrst (Apr. 18).

Derby. Kennel Meadows Farm, Carsington (Apr. 17); Holme Farm, Hillcliffe Lane, Turnditch (Apr. 23).

Lincs. St. Botolphs Farm, Lissington (Apr. 21).

Northumberland. Colwell Well House, Humshaugh, Hexham (Apr. 17); Piggery, The Green, West Woodburn, Hexham (Apr. 19).

Pembroke. Mill Farm, Manorowen, Fishguard (Apr. 19).

Renfrew. Callochant Farm, Kilbarchan (Apr. 19).

Staffs. Broomy Close, Stamshall, Uttoxeter; Hopwas House Farm, Hopwas, Tamworth (Apr. 17).

Suffolk. Hall Farm, Ellough, Beccles (Apr. 18).

Westmorland. Lownthwaite, Milburn, Penrith (Apr. 19).

Yorks. East Farm, Wetherby Road, Boroughbridge (Apr. 17); Manor Farm, Hawnby (Apr. 19); Popely Farm, Gomersal, Leeds (Apr. 20); Eastgate Cottage, North Newbald (Apr. 21); Archers Hall Farm, Sedbergh; Whitbeck Farm, Lofthouse, Harrogate (Apr. 23).

Fowl Pest

Ches. Chestnut Tree Farm, Smallwood, Sandbach (Apr. 19).

Essex. Clanmere, North Drive, Hutton, Brentwood (Apr. 17); Braxted Poultry Farm, Hutton, Brentwood (Apr. 18); 12, Station Colonnade, Westcliffe-

on-Sea, Southend-on-Sea; 2, Horndon View, Lower Dunton Road, Horndon-on-the-Hill, Stanford-le-Hope (Apr. 22).

Herts. Robin Wood House, Little Gaddesden, Berkhamsted (Apr. 20); 75, Rucklers Lane, Kings Langley (Apr. 21).

Swine Fever

Bucks. Manor Farm, Princes Risborough, Aylesbury (Apr. 19); Piggeries at Boar Progeny Testing Station, Risborough Road, and Laboratory Field, North Lee Lane, Stoke Mandeville, Aylesbury (Apr. 23).

Ches. Manor Farm, Hankelow, Crewe (Apr. 20).

Derby. Elm Farm, Barrow-on-Trent (Apr. 21).

Essex. 32, Crow Lane, Romford (Apr. 20).

Glam. 4, Garth Terrace, Penyard, Merthyr Tydfil (Apr. 19); Slon Farm, Ogmore by Sea, Bridgend (Apr. 24).

Kent. Park Hill Hotel, Brittans Lane, Sevenoaks (Apr. 23).

Lancs. Sandilands, Wicks Lane, Formby, Liverpool (Apr. 21); Grange Farm, Birch, Heywood (Apr. 24).

Lincs. Bars Lane, Benington, Boston (Apr. 19).

Norfolk. School Road, Snettisham, Kings Lynn (Apr. 18); Pigsties and Gardens at Chases Shop, Main Street, Emneth (Apr. 23); Lodge Farm, Kempstone, Litcham, Kings Lynn (Apr. 24).

Staffs. Little Hayes Farm, Cheadle, Stoke-on-Trent; 18, Old Birchills, Walsall (Apr. 20); Stockwell Heath, Colton, Rugeley (Apr. 23).

Yorks. Viaduct Piggeries, Kirkstall Road, Leeds, 4 (Apr. 18); 29, Windybank Lane, Hightown, Liversedge (Apr. 19); Manor Farm, Thearne, Beverley (Apr. 20); Sandall Piggeries, Long Sandall, Doncaster (Apr. 23); Thorpe Lane Allotments, Middleton, Leeds (Apr. 24).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Treatment of Tuberculous Pets

Sir,—In the March issue of *The Veterinary Bulletin* there is an abstract of a French thesis in which the treatment of tuberculous dogs and cats with dihydrostreptomycin and isoniazid is described. Ten dogs and 8 cats were treated and there were 8 *apparent* recoveries. In the other 10 cases improvement was either temporary or absent.

The treatment of tuberculous dogs and cats may be justified when carried out as part of a programme of research within a University, or other institute, but it is to be hoped that it will not be carried out on a wide scale in this country without a full understanding of the possible consequences.

As veterinary surgeons we certainly have an obligation to minister to the sick animal but we also have a duty to our community, namely, to assist our medical colleagues to safeguard the health of the public.

A tuberculous dog or cat, if treated at home, is a very grave danger to its owner and, more particularly, his children who will be fondling and playing with the pet at its own level. Even if taken into kennels (which would not be fair to owners of other hospitalised animals) there remains perhaps an even greater danger—*the possible creation of drug-resistant strains of the tubercle bacillus.*

Streptomycin and isoniazid have a habit of leaving in a treated subject a population of tubercle bacilli which is no longer sensitive to the lethal action of the drug used. If a dog or cat in which such a population had been created were to infect its owner, the full benefit of these drugs, which are so wonderfully efficacious when properly used, would no longer be available for his treatment.

Yours faithfully,

J. DEANS RANKIN.

6, Benett Close,
Newbury,
Berks.

April 12th, 1956.

Dislocation of the Hip

Sir,—I feel that Mr. Knight's article (April 14th) on " Dislocation of the Hip in the Dog " is incomplete. Further X-ray films, taken a few days after reduction, should have been printed. They would clearly have demonstrated that most cases were again luxated and that reduction is usually a waste of time.

Yours faithfully,

R. D. FRANKLIN.

31, Cleveland Road,
Wolverhampton.

April 25th, 1956.

Owing to pressure upon our space several letters have had to be held over until next week.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period		Anthrax	Atrophic Rhinitis	Foot-and-Mouth	Fowl Pest	Sheep Scab	Swine Fever
16th to 31st March, 1956		139	—	—	23	—	31
Corresponding period in	1955	42	—	—	18	—	71
	1954	11	—	1	43	—	53
	1953	44	—	1	12	—	177
1st January to 31st March, 1956		822	3	8	171	—	153
Corresponding period in	1955	267	—	6	166	—	312
	1954	71	—	11	411	—	335
	1953	294	—	22	183	—	563